

Setting up  
Connecting to the API  
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Conclusion

# DS607-HW8

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#Assignment – Web APIs

The task is to choose one of the New York Times APIs, construct an interface in R to read in the JSON data, and transform it into an R DataFrame.

## Setting up

I will store the api-key value in an environment variable by using Sys.setenv

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```
library(tidyverse)
library(openintro)
library(httr)
```

```
## Warning: package 'httr' was built under R version 4.0.3
```

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```
library(jsonlite)
```

```
## Warning: package 'jsonlite' was built under R version 4.0.3
```

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```
#Storing the API Key in an environment file
api_key <- Sys.setenv("api_key")
```

## Connecting to the API

To connect to the API, we append the api-key as a query string value to the API URL.

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```
#To connect to the API, we compose the url
url <- paste("https://api.nytimes.com/svc/movies/v2/reviews/picks.json?api-key=",
            api_key, sep="")
res <- GET(url)
data <- fromJSON(rawToChar(res$content))

my_data_frame <- data$results
```

## Analyzing the Data

We begin by taking a look at the data provided by the API:

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```
summary(my_data_frame)
```

```
## display_title      mpaa_rating      critics_pick      byline
## Length:20         Length:20         Min.   :1         Length:20
## Class :character   Class :character   1st Qu.:1         Class :character
## Mode  :character   Mode  :character   Median :1         Mode  :character
##                                     Mean   :1
##                                     3rd Qu.:1
##                                     Max.   :1
## headline           summary_short      publication_date      opening_date
## Length:20          Length:20         Length:20         Length:20
## Class :character   Class :character   Class :character   Class :character
## Mode  :character   Mode  :character   Mode  :character   Mode  :character
##
##
## date_updated
## Length:20
## Class :character
## Mode  :character
##
##
## link.type           link.url           link.suggested_link_text
## Length:20           Length:20         Length:20
## Class :character     Class :character   Class :character
## Mode  :character     Mode  :character   Mode  :character
##
##
## multimedia.type     multimedia.src      multimedia.width      multimedia.height
## Length:20           Length:20         Min.   :210         Min.   :140
## Class :character     Class :character   1st Qu.:210         1st Qu.:140
## Mode  :character     Mode  :character   Median :210         Median :140
## NA                  NA                Mean   :210         Mean   :140
## NA                  NA                3rd Qu.:210         3rd Qu.:140
## NA                  NA                Max.   :210         Max.   :140
```

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```
knitr::kable(head(my_data_frame))
```

```
## Warning in `[<-.data.frame`(`*tmp*`, , j, value = structure(list(type =
## structure(c("article", : provided 3 variables to replace 1 variables
```

```
## Warning in `[<-.data.frame`(`*tmp*`, , j, value = structure(list(type =
## structure(c("mediumThreeByTwo210", : provided 4 variables to replace 1 variables
```

display_title	mpaa_rating	critics_pick	byline	headline	summary_short	publication_date	opening_date	date_updated	link	multimedia
What the Constitution Means to Me		1	Elisabeth Vincentelli	'What the Constitution Means to Me' Review: Pursuits of Happiness	The timing could not be better for Heidi Schreck's affecting play about the Constitution's impact on our daily lives, now streaming on Amazon.	2020-10-22	2020-10-16	2020-10-22 17:12:02	article	mediumThreeB
Synchronic	R	1	Glenn Kenny	'Synchronic' Review: Twisted, Trippy Trips Through Time	The filmmakers Justin Benson and Aaron Moorhead bend reality in this drug-fueled sci-fi horror.	2020-10-22	2020-10-23	2020-10-24 16:44:16	article	mediumThreeB
Ham on Rye		1	Glenn Kenny	'Ham on Rye' Review: Coming of Age, With Existential Unease	Tyler Taormina's debut film starts in the vein of classic high-school comedies until it turns toward a dark surrealism.	2020-10-22	NA	2020-10-22 11:04:07	article	mediumThreeB

display_title	mpaa_rating	critics_pick	byline	headline	summary_short	publication_date	opening_date	date_updated	link	multimedia
Belly of the Beast		1	Lovia Gyarkye	'Belly of the Beast' Review: Fighting for Incarcerated Women	Erika Cohn's new documentary focuses on the sterilization of women in California prisons, and the battle for a law against the practice.	2020-10-15	NA	2020-10-15 16:02:02	article	mediumThreeB
White Riot		1	Glenn Kenny	'White Riot' Review: When Punk's Stars Banded Against Racism	Rubika Shah's documentary about the British organization Rock Against Racism is a compelling depiction of political organizing in the 1970s.	2020-10-15	NA	2020-10-15 11:04:06	article	mediumThreeB
Martin Eden		1	Manohla Dargis	'Martin Eden' Review: Reading and Writing His Way Out of the Pit	In this bold adaptation of the Jack London novel, a young writer suffers, fights and pays as he stands alone against the world.	2020-10-15	2020-10-16	2020-10-15 11:04:08	article	mediumThreeB

Because we used the Movies API to only get critic's picks, we see the pick column value is always one.

Let's count the movies by rating:

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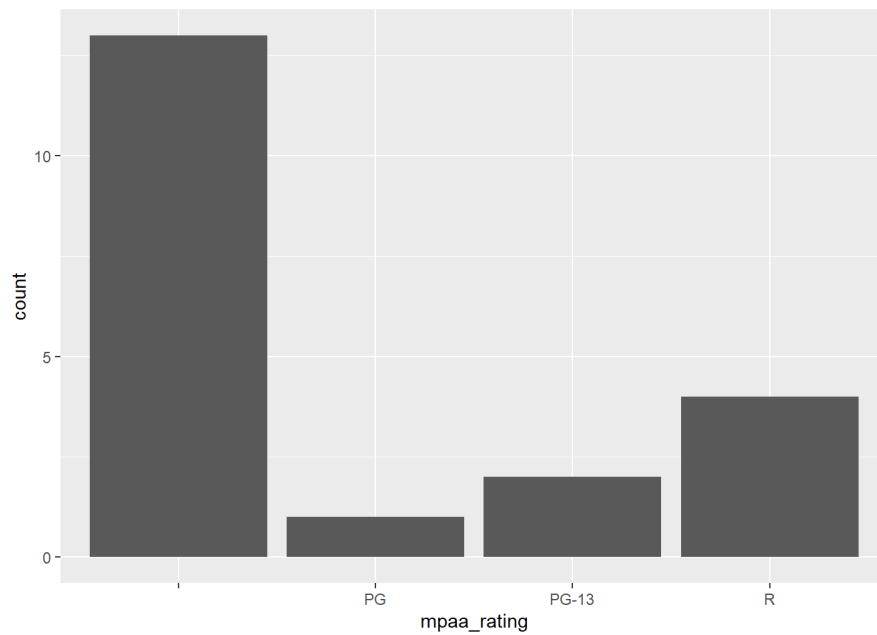
```
movies_ratings <- my_data_frame %>%
  count(mpaa_rating) %>%
  mutate(p = n / sum(n))

movies_ratings$mpaa_rating[1] <- "No Rating"
knitr::kable(movies_ratings)
```

mpaa_rating	n	p
No Rating	13	0.65
PG	1	0.05
PG-13	2	0.10
R	4	0.20

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```
ggplot(data=my_data_frame, aes(x=mpaa_rating, stat="count")) +
  geom_bar()
```



## Conclusion

It appears that most of the NY Times Critic's picks are not rated by the MPAA. Further analysis could be done to try to infer the probability of a movie being picked by a critic based on its description (to try to determine its genre and other descriptive features).

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